

Remarks

Claim Rejections Section 103(a)

Claims 21- 40, which the examiner renumbered as Claims 26 - 41 have been cancelled.

New and/or currently amended Claims 42 - 57 now include all of the limitations formerly found in cancelled all previously cancelled Claims 1- 20 and 21 - 40 (as renumbered, 26-41).

Kindly amend the claims as shown in the attached Listing of Claims

Applicant respectfully disagrees with the examiner that there is a basis under 35 U.S.C. 103(a) to reject the claims as being unpatentable over Weiss et al. (U.S. 4,263,981) in view of Lyman (U.S. 4,109,753), and further in view of Chang (U.S. 6,343,673).

As explained to the examiner in Amendment A filed 06 December, 2004, the present invention encompasses an exhaust chamber system comprising a rotatable propeller type blade assembly within or adjacent to an expansion chamber to create a shaped (**non turbulent**) vortex that swirls and accelerates (**increased** axial flow) exhaust gas towards the outlet. The resultant vacuum within the exhaust chamber aids in scavenging an internal combustion engines exhaust gases, and in **reducing** system back pressure. The exhaust chamber maintains the sound level of the exhaust within acceptable limits, while delivering improved horsepower, torque, and/or fuel efficiency over standard and other performance mufflers.

Applicant agrees that the Weiss et al. expansion chamber and related structure meets the limitations of the claims, EXCEPT IT DOES NOT IN ANY WAY TEACH THE LOCATION AND STRUCTURE OF THE MEANS FOR SWIRLING EXHAUST GASES FROM THE INLET OF THE CHAMBER TO ITS OUTLET, and this paper is intended to deal with the limitation in the teachings of the Lyman and Chang references.

Applicant respectfully submits that the examiner has not recognized Lyman and Chang teach away from and are contrary to applicant's invention. There is no doubt that Lyman's diffuser (72) is **fixed** and is intended to block the passage of gases from the engine into the

chamber, as it comprises a plate which is solid at its center and with angular vanes bent from it surrounding the closed center. Lyman says:

“The baffle 74 of the diffuser 72 substantially blocks and restricts the axial flow of exhaust gases ...”(col. 6, line 4).

“The muffler assembly 10 further includes **flow control means...for substantially blocking and restricting the axial flow of exhaust gases** 12 along positions of the longitudinal axis...(with) flow control means (which) takes the form of a diffuser 72... The flat baffle 74 presents a blunt face to the exhaust gases 12 which results in considerable turbulence and **substantially blocks and restricts** the longitudinal flow of exhaust gases...”; and

“In operation, the muffler assembly 10...**reduces axial velocity** of the exhaust gases.... and substantially creates a general turbulent flow pattern in the muffler 14.” (See Lyman col. 3, lines 62-col. 4, line 15, col. 4, lines 20 - 25 and col. 5, lines 50 - 62).

There is no such blocking and restricting of gases in applicant’s structure. Applicant’s propeller **enhances the flow** of gas (for example, as an airplane propeller blows air over a wing to enhance lift, or a fan brings air into a closed room to cool it). There is no doubt that Weiss’ blocking structure causes turbulence, but it does not move gases along to exhaust at a faster pace, as is the case with applicant’s propeller.

Chang’s propeller device is placed at the tail pipe of a vehicle, and not at the entry to the expansion chamber and there is no suggestion of placing it between the engine exit and the exhaust chamber. Chang says his exhaust turbine assembly **increases pressure back** pressure on the engine (applicant **decreases** back pressure on the engine). Chang states (Please see col. 2, lines 37 - 46):

“In operation, when the exhaust waste passes through the turbine exhaust device 30... the gas flow exerts an impact on the rear vane 35, thereby forming a pressure back effect...”

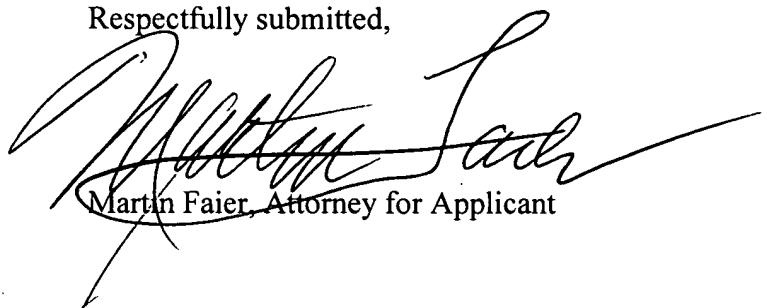
Applicant has amended the claims to more clearly point out the importance of the placement and structure of the propeller device and submits herewith claims which are intended to accomplish that effect. Applicant is in process of testing structures which have Lyman’s blocking inlet diffuser and Chang’s outlet inhibitor vane in comparison to his inlet flow enhancement device, and intends to submit that data when available.

Applicant believes the amended pending claims are patentable over the prior art, and respectfully request allowance.

A listing of the claims in this application accompanies this Amendment B.

The Commissioner is hereby authorized to charge any additional fees which may be required in this application to Deposit Account No. 06-0040 of the undersigned attorney. In the case of overpayment, please credit the same account.

Respectfully submitted,



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